

SECTION 12346 - WOOD LABORATORY CASEWORK

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes, but is not limited to, all materials, labor and equipment, complete with all anchors and related accessories, necessary to furnish, deliver and install:
 - 1. Open-leg Tables
 - 2. Wood Aprons
 - 3. Floor Mounted Base Cabinets (Swinging doors, drawers and open shelves)
 - 4. Wall Mounted Cabinets
 - 5. Swinging Solid and Glass Door Full Height Cabinets
 - 6. Microscope Cabinets
 - 7. Wall Mounted Shelves
 - 8. Miscellaneous fillers and panels required for a finished installation
- B. Although such work is not specifically shown or specified, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
- C. For general requirements applicable to this and all other Casework Specification Sections including, but not limited to definitions, system description, submittals, quality assurance, mock-up, testing, field measurements, pre-installation conference, delivery, storage and handling, project conditions, and sequencing requirements, refer to Specification Section 12340 for Laboratory Casework - General Requirements.
- D. Products Installed But Not Specified Under This Section:
 - 1. Section 12309 - Laboratory Service Fixtures: Supply of service fixtures for placement under this Section.

PART 2 - PRODUCTS

2.01 GENERAL

- A. For general requirements, applicable to this and all other Casework Specification Sections including, but not limited to, manufacturers, materials, components, and finish and performance requirements, refer to Specification Section 12340 - Laboratory Casework - General Requirements.

2.02 MANUFACTURERS

- A. Casework Acceptable Manufacturers:
 - 1. Kewaunee Scientific Corporation, Statesville, NC

2. Advanced Lab Concepts (ALC), Austin, TX
3. Valley City Manufacturing, Dundas, ON, Canada

2.03 FABRICATION

- A. Prior to fabrication, field measure actual existing conditions to ensure proper fit.
- B. Casework shall be maple, square edge flush overlay style construction with 1/8" reveals between door to door, door to drawer, drawer to drawer; 1/16" vertical reveal between doors/drawers and cabinet ends.
- C. Cabinets shall be rigid, self-supporting design for use in assembly or as a single stand alone unit if furnished with exposed finished ends.
- D. Flush Interiors: Surface mounted bottoms and offsets caused by front face frames, which interfere with ease of cleaning, are not acceptable.
- E. Joinery: 1 1/4" doweled joinery system glued, clamped and screwed. Dowels to be hardwood, laterally fluted with chamfered ends and a minimum diameter of 0.31". Spacing of dowels to meet AWI (Architectural Woodworking Institute) and WI (Woodwork Institute) standards. Exposed shoulder pocket screw fasteners are not acceptable.
- F. Casework width and depth dimension are to be within plus or minus 1/2" from what is shown on the drawings. Manufacturer's standards are not acceptable unless able to meet these requirements.
- G. Cabinet ends: 3/4" thick plywood (for both exposed and concealed ends) with 3mm hardwood banding on front edges. Bore interior faces, as appropriate, for security panels, rails, and four rows of shelf support holes.
- H. No levelers required. Wood shimming approved.

2.04 OPEN-LEG TABLES

- A. Perimeter table frame rails: 3/4" x 4-5/16" hardwood with attached steel corner braces, grooved and screwed into both rails at each corner. (Bottom rail edges to be radiused.)
- B. Reinforcing cross rails: 3/4" veneer core plywood, doweled and glued and pinned into front and back rails, at intervals not more than 33" on center in tables without drawers.
- C. Separate cross rails: 3/4" x 4-5/16" hardwood with attached steel brackets at both ends.
- D. Legs: 2" x 2" hardwood, with 3/8"-16 x 3-1/2" hanger bolt inserted 1-3/4" into leg and fastened to perimeter rail corner brace.
- E. Leg rails (if required): 1-1/4" x 2-1/2" hardwood mortised into legs and secured with 3/8"-16 x 5" stove bolt.
- F. Leg shoes: Black rubber or vinyl with provision for floor clip.
- G. Tables with electrical outlets at the apron shall be provided with cleats so that the 6' cords can be wrapped up when not in use.

- H. Adjustable tables shall have maple apron with steel corner brace. Adjustable legs shall adjust the height from 27" H to 39" H in one inch increments. Powder coated steel legs shall be adjustable without the use of tools. Legs shall rise on a ratchet system and lower slowly on hydraulics. There shall be no pinch points between the leg and the top. Legs shall include a black spacer and leveling glide which can be removed by simply screwing off. Top shall be 1" phenolic resin to match color of countertops.

2.05 WOOD APRONS

- A. All apron rails shall be 3/4" thick 5-ply maple veneer lumber core plywood.

2.06 FLOOR MOUNTED BASE CABINETS (SWINGING DOOR, DRAWER, AND OPEN SHELF)

- A. All cabinet end panels shall be 3/4" thick 7-ply hardwood plywood and 3/4" x 1/8" thick maple facing. End panels shall be multiple doweled, glued and/or screwed to top frame members, intermediate rails and bottoms. Cabinet backs shall be 1/4" thick tempered hardboard dadoed into end panels and bottoms and securely fastened. Cupboard bottoms shall be 3/4" thick, 7-ply hardwood plywood with 3/4" x 1/8" maple facing on front edge. All cupboard base units shall have full-width adjustable shelves, 3/4" thick, 7-ply plywood with maple facing on exposed edges. Integrally joined parts shall result in a totally enclosed cabinet.
- B. General construction for open shelf base cabinet features shall be the same as for swinging door base cabinets except without doors.
- C. Drawers: Drawer sides shall be 7/16" thick, 7-ply solid maple plywood. Drawer heads shall be 3/4" thick, 5-ply solid core plywood. A glue and dove-tailed joint shall be used to attach the drawer head to the sides on all drawers over 3" in depth. A mortise and tenon joint shall be used for shallow drawers. Drawer bottoms shall be 1/4" thick tempered hardboard, set and glued into 1/4" grooves, four sides, with the same clear chemical resistance finish as the exposed wood.
- D. Drawer Suspension: All drawer suspension assemblies shall be rated at 150 pounds. Case channels shall maintain alignment of drawer. The drawer shall be removable without the use of tools. Drawers shall be self-closing. Slides shall wrap under drawer sides for additional support. Drawer stops shall be provided.

2.07 WALL MOUNTED CABINETS

- A. Cabinets shall be designed and integrally constructed for full enclosure to assure dust proofing of the cabinet interior. All exposed woods shall be maple. All end panels shall be 3/4" thick maple with a 3/4" x 1/8" maple hardwood facing. Tops for open or glazed doors shall be 3/4" thick maple plywood, multiple doweled into end panels secured with glue and countersunk screws. Glass framed doors shall be 3/4" thick with 3-3/16" wide solid maple framing under 48" in height, and 1" thick by 3-3/16" solid maple framing for 48" high cabinets. Glass shall be set into door frame and secured with a plastic retainer. Shelves, exposed to view, shall be full-width, 3/4" thick plywood with a maple banding.
- B. Doors:
 - 1. Sliding Plate Glass Doors:
 - a. Solid glass doors shall be 1/4" thick float glass with polished edges. Doors shall be set in an aluminum bottom frame containing roller bearings and held in position with an aluminum guide at the top of the case.

2. Swinging Doors:
 - a. Cabinets shall be designed and integrally constructed for full enclosure to assure dust proofing of the cabinet interior.
 - b. Doors shall either be solid hardwood core panel or glass framed, as indicated. Solid hardwood core doors shall be 3/4" thick maple plywood with 1/8" maple edging. Glass doors shall be 1/4" thick float glass with polished edges.
 - c. Doors shall be hung on 1 pair of offset hinges and shall latch with a roller catch. Double doors without locks shall have a roller catch on each door. Double doors with locks shall have an elbow catch and White Maple astragal mounted to the left-hand door and the lock and a roller catch mounted on the right-hand door. Glass shall be set into door solid maple frame and secured with a plastic retainer.

2.08 SWINGING SOLID AND GLASS DOOR FULL HEIGHT CABINETS

1. Cabinets shall be designed and integrally constructed for full enclosure to assure dust proofing of the case interior. All exposed woods shall be maple. All end panels shall be 3/4" thick maple with a 3/4" x 1/8" maple hardwood facing. Tops for open or glazed doors shall be 3/4" thick maple plywood, multiple doweled into end panels secured with glue and countersunk screws. The top in solid door cases shall be 3/4" thick plywood. Panel doors shall be 1" thick, solid hardwood core plywood. Glass framed doors shall be 3/4" thick with 3-3/16" wide solid maple framing under 48" in height, and 1" thick by 3-3/16" solid maple framing for 48" high cabinets, mortised, tenoned, and glued. Glass shall be set into door frame and secured with a plastic retainer. Doors shall be removable without use of tools, and so designed to prevent by-passing. Doors shall either be solid hardwood core panel, glass framed or with marker board as indicated, hung on 1-1/2 pair of 2-1/2' long offset type institutional hinges. Swinging doors shall overlap opening four sides; astragal applied to left hand door shall provide further dust proofing. Marker board doors shall be 3/4 inch white maple composite core plywood with 1/8 inch white maple edging. A dry-erase magnetic white board shall be applied to the wood door. Shelves, exposed to view, shall be 3/4" thick maple plywood with a maple banding on exposed edge; unexposed shelves shall be 3/4" thick plywood with and maple banding. To assure a completely rigid case, the center shelf shall be structurally joined to the end panels and glued. All other shelves (4) shall be adjustable on 1 1/4" centers. Cabinet bottoms shall be 3/4" thick maple plywood, exposed to view, or 3/4" thick plywood, unexposed, multiple doweled and glued securely to end panels. Glue blocks, 3" long, shall further support and strengthen all joints. All cabinets 22" in depth shall have 3/4" thick maple plywood bottom with a 3/4" x 1/8" thick maple hardwood facing, and a 3/4" x 4" hardwood plywood toe space rail to form a 2-1/2" deep x 4" high totally enclosed toe space. Twelve inch and sixteen inch deep cabinets shall use a 1" x 4-3/4" solid maple base rail mounted flush with the face of the case. The backs in open and glazed door cabinets shall be 1/4" maple plywood while the back not exposed to view shall be 1/4" tempered hardboard. Cabinet interior shall be flush. A 2-1/2" x 4" high totally enclosed toe space shall be same as for base units. Doors shall either be solid hardwood core panel or glass framed, as indicated.

2.09 Microscope Cabinets

1. General construction for the Microscope Cabinets shall be the same as for the Swinging Solid and Glass Door Full Height Cabinets, except as follows:
 - a. Provide 20 or 30 microscope storage compartments, as shown on drawings.
 - b. Cabinet shall have glass doors and be lockable.
 - c. All Microscope Cabinet shelves and vertical partitions shall be adjustable and removable.

2.10 Wall Mounted Shelving System:

1. Wall Mounted Shelving Systems shall consist of Wood Shelves, with Heavy Duty Vertical Wall Standards, and Heavy Duty Adjustable Shelf Brackets. Fasten standards to concrete masonry walls or properly blocked steel studded walls with appropriate flat head screws.
2. Vertical Wall Standards shall allow adjustable bracket to be positioned along its full length for maximum use of space. A pair of vertical supports shall hold the shelves and their support brackets.
3. Adjustable shelf bracket shall have up-turned lip to prevent shelves from being pulled off bracket. It shall be formed from high-strength, cold-rolled steel. It shall include mounting hardware to secure bracket to vertical wall standards.

2.11 FASTENERS AND ANCHORS

- A. Size and type to securely fasten and anchor items to substrates and supporting structure.
- B. Provide miscellaneous fillers and panels required for a finished installation.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

- A. For General Installation Requirements, applicable to this and all other Casework Specification Sections including, but not limited to, examination, installation, adjusting, cleaning, and protection requirements, refer to Specification Section 12340 for Laboratory Casework - General Requirements.

3.02 ADDITIONAL INSTALLATION REQUIREMENTS

- A. Floor Mounted Base Cabinets:
 1. Locate at designated positions
 2. Level by means of adjustment device located in cabinet's bottom corners
 3. Continuously seal space between base cabinet and floor with sanitary silicone specified in Division 7.
- B. Countertops: Anchor to base cabinets, unless noted otherwise.
- C. Fasten together assemblies listed below with devices of adequate strength to support cabinet and shelves loaded 40 pound per square foot per shelf for enclosed wall cabinets or open adjustable shelves not inclusive of cabinet, shelf, and bracket weight.
 1. Wall cabinet to wall
 2. Wall mounted shelves to wall
- D. Site Tolerances: Install wall-to-wall countertops with a maximum 1/4 inch gap.

END OF SECTION 12346